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PATENT

Serial No. 10/020,019

Amendment in Reply to Office Action of December 19, 2005  
And Notice of Abandonment of September 14, 2006REMARKS

This Amendment is being filed in response to the Office Action mailed December 19, 2005, which has been reviewed and carefully considered. Reconsideration and allowance of the present application in view of the amendments made above and the remarks to follow are respectfully requested.

By means of the present amendment, the current Abstract has been amended for better conformance to U.S. practice, where a Replacement Abstract is enclosed.

In the Office Action, the Examiner objected to claims 2-3 and 5 for certain informalities. Further, claim 14 is rejected under 35 U.S.C. §112, second paragraph. In response, claims 2-3, 5, 8, 10 and 13-14 have been amended for better clarity. Claims 2-3, 5, 8, 10 and 13-14 were not amended in order to address issues of patentability and Applicants respectfully reserve all rights under the Doctrine of Equivalents. It is respectfully submitted that the objection to claims 2-3 and the rejection of claim 14 have been overcome and an indication as such is respectfully requested.

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In the Office Action, claim 3 is rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. 5,632,023 (White) or an article entitled "Superscalar Microprocessor Design" by Mike Johnson (Johnson). Further, claims 1-3, 5-11 and 13-14 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. 6,044,450 (Tsushima). It is respectfully submitted that claims 1-3, 5-11 and 13-14 are patentable over White, Johnson and Tsushima for at least the following reasons.

White is directed to a superscalar microprocessor 200 shown in FIG 2A that includes a reorder buffer 285 coupled via operand/flag selection block 290 to various functional units 235, 240, 245, 260, 265, 250 shown in FIG 2B. Each functional unit, except for a special register 250, has a reservation stations 235R, 240R, 245R, 260R, 265R.

As specifically recited on column 11, lines 35-47:

Each functional unit includes respective reservation stations (RS) 235R, 240R, 245R, 260R and 265R for storing OP CODEs from instructions which are not yet complete because operands for that instruction are not yet available to the functional unit. Each reservation station stores the instruction's OP CODE and operands together with tags which reserve places for the missing operands that will arrive at the reservation

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station later. This technique enhances performance by permitting microprocessor 200 to continue executing other instructions while the pending instruction is being assembled with its operands at the reservation station. (Emphasis added)

Thus, as underlined above, the White reservation stations store data. It is respectfully submitted that the reservation stations provide no control function whatsoever. Rather, it is the microprocessor 200 that provides control.

Johnson is directed to a superscalar microprocessor design that includes functional units, as shown in FIG 3-7 and recited on page 46, second full paragraph. Johnson specifically recites on page 46, second full paragraph that each functional unit has an individual buffer, called a reservation station. Thus, similar to white, the Johnson reservation station is nothing more than a memory or buffer which is filled with data and provides no control function whatsoever. (See page 46, last two lines)

Tsushima is directed to a VLIW instruction processor, shown in FIG 1, that includes various functional units 204-1, 204-2, 205-1, 205-2, 206-1, 206-2, 207. Instruction expanding circuits 300a, 300b, 300c, 300d are coupled to the functional units via a decode

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unit. As clearly shown in FIG 1, there are 4 instruction expanding circuits associated with 7 functional units. Thus, each functional unit does not have its respective instruction expanding circuit.

In stark contrast, the present invention as recited in independent claim 1, and similarly recited in independent claims 3 and 10, amongst other patentable elements requires (illustrative emphasis provided):

at least one control unit is operatively associated with a respective functional unit for controlling its function.

There is simply no teaching or suggestion in White, Johnson, Tsushima, alone or in combination, a control units operatively associated with respective functional units for controlling function thereof. Rather, White, Johnson and Tsushima merely teach buffers or memories that are associated with functional units, where such buffers or memories provide no control function whatsoever.

Accordingly, it is respectfully submitted that independent claims 1, 3 and 10 should be allowable, and allowance thereof is respectfully requested. In addition, it is respectfully submitted that claims 2, 5-9, 11 and 13-14 should also be allowed at least

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based on their dependence from amended independent claims 1, 3 and 10.

In addition, Applicants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicants reserve the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

It is believed that no additional fees or charges are currently due beyond the fee for the Petition to Revive. However, in the event that any additional fees or charges are required for entrance of the accompanying amendment, they may be charged to Applicants' representatives Deposit Account No. 50-3649. In addition, please credit any overpayments related to any fees paid in connection with the accompanying amendment to Deposit Account No. 50-3649.

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In view of the above, it is respectfully submitted that the present application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

Respectfully submitted,

By   
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November 13, 2006

Enclosure: Petition to Revive  
Replacement Abstract  
Authorization to Charge Credit Card \$1,500  
for Filing the Petition to Revive

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